RAW SEQUENCE LISTING   DATE: 05/24/2001
PATENT APPLICATION: US/09/730,374   TIME: 15:13:14

Input Set : A:\150188us2.txt
Output Set: C:\CRF3\05242001\I730374.raw   ENTERED

```
  5 <110> APPLICANT: Lust, John A.
  6         Donovan, Kathleen A.
  8 <120> TITLE OF INVENTION: USE OF GENETICALLY ENGINEERED ANTIBODIES
  9         TO CD38 TO TREAT MULTIPLE MYELOMA
 12 <130> FILE REFERENCE: 150.188US2
 14 <140> CURRENT APPLICATION NUMBER: 09/730,374
C--> 15 <141> CURRENT FILING DATE: 2001-05-10
 17 <150> PRIOR APPLICATION NUMBER: PCT/US99/12512
 18 <151> PRIOR FILING DATE: 1999-06-04
 20 <150> PRIOR APPLICATION NUMBER: 60/088,277
 21 <151> PRIOR FILING DATE: 1998-08-05
 23 <160> NUMBER OF SEQ ID NOS: 4
 25 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 27 <210> SEQ ID NO: 1
 28 <211> LENGTH: 750
 29 <212> TYPE: DNA
 30 <213> ORGANISM: Artificial Sequence
 32 <220> FEATURE:
 33 <223> OTHER INFORMATION: A nucleotide sequence encoding a single chain
 34         variable region fragment (scFv)
 36 <400> SEQUENCE: 1
 37 ggcccagccg gccatggcca aggtccagct gcaggagtca ggacctagcc tagtgcagcc    60
 38 ctcacagcgc ctgtccataa cctgcacagt ctctggtttc tcattaatta gttatggtgt   120
 39 acactgggtt cgccagtctc caggaaaggg tctggagtgg ctgggagtga tatggagagg   180
 40 tggaagcaca gactacaatg cagctttcat gtccagactg agcatcacca aggacaactc   240
 41 caagagccaa gttttcttta aaatgaacag tctgcaagct gatgacactg ccatatactt   300
 42 ctgtgccaaa accttgatta cgacgggcta tgctatggac tactggggcc aagggaccac   360
 43 ggtcaccgtc tcctcaggtg gaggcggttc aggcggaggt ggctctggcg gtggcggatc   420
 44 ggacatcgag ctcactcagt ctccatcctc cttttctgta tctctaggag acagagtcac   480
 45 cattacttgc aaggcaagtg aggacatata taatcggtta gcctggtatc agcagaaacc   540
 46 aggaaatgct cctaggctct aatatctgg tgcaaccagt ttggaaactg gggttccttc   600
 47 aagattcagt ggcagtggat ctggaaagga ttacactctc agcattacca gtcttcagac   660
 48 tgaagatgtt gctacttatt actgtcaaca gtattggagt actcctacgt tcggtggagg   720
 49 gaccaagctg gaaatcaaac gggcggccgc                                    750
 51 <210> SEQ ID NO: 2
 52 <211> LENGTH: 241
 53 <212> TYPE: PRT
 54 <213> ORGANISM: Artificial Sequence
 56 <220> FEATURE:
 57 <223> OTHER INFORMATION: A polypeptide encoded by an open reading frame of
 58         SEQ ID NO:1
 60 <400> SEQUENCE: 2
 61 Gly Pro Ala Gly His Gly Gln Gly Pro Ala Ala Gly Val Arg Thr Pro
 62 1               5                   10                  15
 63 Ser Ala Ala Leu Thr Ala Pro Val His Asn Leu His Ser Leu Trp Phe
 64             20                  25                  30
 65 Leu Ile Asn Leu Trp Cys Thr Leu Gly Ser Pro Val Ser Arg Lys Gly
```

RAW SEQUENCE LISTING   DATE: 05/24/2001
PATENT APPLICATION: US/09/730,374   TIME: 15:13:14

Input Set : A:\150188us2.txt
Output Set: C:\CRF3\05242001\I730374.raw

```
66          35                    40                   45
67 Ser Gly Val Ala Gly Ser Asp Met Glu Arg Trp Lys His Arg Leu Gln
68          50                    55                   60
69 Cys Ser Phe His Val Gln Thr Glu His His Gln Gly Gln Leu Gln Glu
70 65                    70                   75                   80
71 Pro Ser Phe Leu Asn Glu Gln Ser Ala Ser His Cys His Ile Leu Leu
72                    85                   90                   95
73 Cys Gln Asn Leu Asp Tyr Asp Gly Leu Cys Tyr Gly Leu Leu Gly Pro
74                    100                  105                  110
75 Arg Asp His Gly His Arg Leu Leu Arg Trp Arg Arg Phe Arg Arg Arg
76          115                  120                  125
77 Trp Leu Trp Arg Trp Arg Ile Gly His Arg Ala His Ser Val Ser Ile
78          130                  135                  140
79 Leu Leu Phe Cys Ile Ser Arg Arg Gln Ser His His Tyr Leu Gln Gly
80 145                  150                  155                  160
81 Lys Gly His Ile Ser Val Ser Leu Val Ser Ala Glu Thr Arg Lys Cys
82                    165                  170                  175
83 Ser Ala Leu Asn Ile Trp Cys Asn Gln Phe Gly Asn Trp Gly Ser Phe
84          180                  185                  190
85 Lys Ile Gln Trp Gln Trp Ile Trp Lys Gly Leu His Ser Gln His Tyr
86          195                  200                  205
87 Gln Ser Ser Asp Arg Cys Cys Tyr Leu Leu Leu Ser Thr Val Leu Glu
88          210                  215                  220
89 Tyr Ser Tyr Val Arg Trp Arg Asp Gln Ala Gly Asn Gln Thr Gly Gly
90 225                  230                  235                  240
91 Arg
94 <210> SEQ ID NO: 3
95 <211> LENGTH: 249
96 <212> TYPE: PRT
97 <213> ORGANISM: Artificial Sequence
99 <220> FEATURE:
100 <223> OTHER INFORMATION: A polypeptide encoded by an open reading frame of
101       SEQ ID NO:1
104 <400> SEQUENCE: 3
105 Ala Gln Pro Ala Met Ala Lys Val Gln Leu Gln Glu Ser Gly Pro Ser
106 1           5                    10                   15
107 Leu Val Gln Pro Ser Gln Arg Leu Ser Ile Thr Cys Thr Val Ser Gly
108                    20                   25                   30
109 Phe Ser Leu Ile Ser Tyr Gly Val His Trp Val Arg Gln Ser Pro Gly
110          35                    40                   45
111 Lys Gly Leu Glu Trp Leu Gly Val Ile Trp Arg Gly Gly Ser Thr Asp
112          50                    55                   60
113 Tyr Asn Ala Ala Phe Met Ser Arg Leu Ser Ile Thr Lys Asp Asn Ser
114 65                    70                   75                   80
115 Lys Ser Gln Val Phe Phe Lys Met Asn Ser Leu Gln Ala Asp Asp Thr
116                    85                   90                   95
117 Ala Ile Tyr Phe Cys Ala Lys Thr Leu Ile Thr Thr Gly Tyr Ala Met
118                    100                  105                  110
119 Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly
```

RAW SEQUENCE LISTING   DATE: 05/24/2001
PATENT APPLICATION: US/09/730,374   TIME: 15:13:14

Input Set : A:\150188us2.txt
Output Set: C:\CRF3\05242001\I730374.raw

```
120           115                   120                   125
121 Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Glu Leu
122      130                   135                   140
123 Thr Gln Ser Pro Ser Ser Phe Ser Val Ser Leu Gly Asp Arg Val Thr
124 145                   150                   155                   160
125 Ile Thr Cys Lys Ala Ser Glu Asp Ile Tyr Asn Arg Leu Ala Trp Tyr
126                   165                   170                   175
127 Gln Gln Lys Pro Gly Asn Ala Pro Arg Leu Leu Ile Ser Gly Ala Thr
128              180                   185                   190
129 Ser Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
130           195                   200                   205
131 Lys Asp Tyr Thr Leu Ser Ile Thr Ser Leu Gln Thr Glu Asp Val Ala
132      210                   215                   220
133 Thr Tyr Tyr Cys Gln Gln Tyr Trp Ser Thr Pro Thr Phe Gly Gly Gly
134 225                   230                   235                   240
135 Thr Lys Leu Glu Ile Lys Arg Ala Ala
136                   245
138 <210> SEQ ID NO: 4
139 <211> LENGTH: 239
140 <212> TYPE: PRT
141 <213> ORGANISM: Artificial Sequence
143 <220> FEATURE:
144 <223> OTHER INFORMATION: A polypeptide encoded by an open reading frame of
145         SEQ ID NO:1
148 <400> SEQUENCE: 4
149 Pro Ser Arg Pro Trp Pro Arg Ser Ser Cys Arg Ser Gln Asp Leu Ala
150 1              5                   10                  15
151 Cys Ser Pro His Ser Ala Cys Pro Pro Ala Gln Ser Leu Val Ser His
152              20                   25                  30
153 Leu Val Met Val Tyr Thr Gly Phe Ala Ser Leu Gln Glu Arg Val Trp
154           35                   40                  45
155 Ser Gly Trp Glu Tyr Gly Glu Val Glu Ala Gln Thr Thr Met Gln Leu
156      50                   55                  60
157 Ser Cys Pro Asp Ala Ser Pro Arg Thr Thr Pro Arg Ala Lys Phe Ser
158 65                   70                   75                  80
159 Leu Lys Thr Val Cys Lys Leu Met Thr Leu Pro Tyr Thr Ser Val Pro
160                   85                   90                  95
161 Lys Pro Leu Arg Arg Ala Met Leu Trp Thr Thr Gly Ala Lys Gly Pro
162              100                  105                 110
163 Arg Ser Pro Ser Pro Gln Val Glu Ala Val Gln Ala Glu Val Ala Leu
164           115                  120                 125
165 Ala Val Ala Asp Arg Thr Ser Ser Ser Leu Ser Leu His Pro Pro Phe
166      130                   135                 140
167 Leu Tyr Leu Glu Thr Glu Ser Pro Leu Leu Ala Arg Gln Val Arg Thr
168 145                   150                  155                 160
169 Tyr Ile Ile Gly Pro Gly Ile Ser Arg Asn Gln Glu Met Leu Leu Gly
170                   165                  170                 175
171 Ser Tyr Leu Val Gln Pro Val Trp Lys Leu Gly Phe Leu Gln Asp Ser
172              180                  185                 190
```

RAW SEQUENCE LISTING   DATE: 05/24/2001
PATENT APPLICATION: **US/09/730,374**   TIME: 15:13:14

Input Set : **A:\150188us2.txt**
Output Set: **C:\CRF3\05242001\I730374.raw**

```
173 Val Ala Val Asp Leu Glu Arg Ile Thr Leu Ser Ala Leu Pro Val Phe
174         195               200             205
175 Arg Leu Lys Met Leu Leu Leu Ile Thr Val Asn Ser Ile Gly Val Leu
176     210             215             220
177 Leu Arg Ser Val Glu Gly Pro Ser Trp Lys Ser Asn Gly Arg Pro
178 225             230             235
```

VERIFICATION SUMMARY   DATE: 05/24/2001
PATENT APPLICATION: US/09/730,374   TIME: 15:13:15

Input Set : **A:\150188us2.txt**
Output Set: **C:\CRF3\05242001\I730374.raw**

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date